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AUTHOR Carroll, Rebecca E.; Cook, J. Marvin
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ABSTRACT

The intent of this paper is to recount briefly the management process and the sequence of activities that have let the Baltimore City Public School System to the stage in its curriculum development where the focus is on learning hierarchies as a major tool in the improvement of the teaching/learning process. In the fall of 1973, Baltimore City began the process of moving toward the use of learning hierarchies throughout the school system. The movement has gained momentum and commitment within the system since that early step. This effort was based on the following expected benefits for the student: (1) increased rate of learning, (2) increased resistance to forgetting, and (3) increased motivation. Following study sessions in 1973, management plans were developed by the Office of Staff Development for Phase I of an extensive inservice training program. Phase II is now being planned to provide each teacher in the school system additional support at the point of using learning hierarchies in the classroom. This support will be in response to the observed needs identified from operation of Phase I of the continually evolving long-range plan to implement learning hierarchies into the classroom curriculum of Baltimore City Public Schools. (Author/JM)

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APPLICATION OF LEARNING HIERARCHIES

TO CURRICULUM CHANGE

IN A LARGE URBAN SCHOOL SYSTEM

by

Rebecca E. Carroll
Acting Deputy Superintendent
Bureau of Education
Baltimore City Public Schools
Baltimore, Maryland

J. Marvin Cook
Associate Professor of Education
Coordinator of Curriculum and Instruction
Division of Education
University of Maryland Baltimore County
Baltimore, Maryland

(Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, California, April, 1976.)

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APPLICATION OF LEARNING HIERARCHIES TO CURRICULUM CHANGE IN A LARGE URBAN SCHOOL SYSTEM

by

Rebecca E. Carroll and J. Marvin Cook

Many people, including educators, are bemoaning the status of education in the large urban centers. Currently at a peak is the frequency of criticism about student lack of achievement in the basic skills. In addition, the inability of students to pass job entry tests is dramatically and realistically highlighted. Educators would be less than honest to counteract such criticism with a declaration of the high motivation and interest of many students in learning. In fact, to the opposite, educators are seeking ways of changing the learning environment and the strategies for learning that are currently used. Is it anachronistic to believe that individualized, successful learning with built-in-facilities for learning motivation can take place in mass education? Is it additional folly to hypothesize that most students can be successful learners in a specific discipline? The use of learning hierarchies in one urban school system is an attempt to counteract some of the educational "stumbling blocks to achievement," to answer the postulated questions, and to provide more opportunities for student-success in learning. Even though it is too soon to present statistical data with sweeping conclusions, it is not too early to define the planning process, to outline the operational procedures followed, and to hypothesize about the results of using learning hierarchies as a total curriculum approach in the Baltimore City Schools.

Expected Benefits

In the fall of 1973, Baltimore City began the process of moving toward the use of learning hierarchies throughout the school system. The movement has gained momentum and commitment within the system since that early step.

The effort to implement the use of learning hierarchies in the Baltimore City School System was based upon the expectations gained from a review of the research on behavioral objectives and learning hierarchies and from the application of learning hierarchies in local settings. Although surveys of the research by Briggs (1), Walbesser and Eisenberg (2), and White (3), and more recently Walbesser (4) do not yield conclusive results, they have raised for Baltimore City the expectation that learning hierarchies will be an educational tool that will help to increase the success patterns of urban students.

While the findings from the research indicate that the benefits to be gained from the use of behavioral objectives and learning hierarchies need to be studied further, the findings were sufficient for Baltimore City to expect that the following benefits might be gained by the student:

1) increased rate of learning

2) increased resistance to forgetting

3) increased motivation.

A study recently completed by Cook and Sacco (5) suggests that teachers' attitudes toward accountability issues are moved toward the positive end of the scale when they have acquired the competence to teach with learning hierarchies. The findings by Cook and Sacco lend support to Baltimore

City's expectations that by providing in-service training to its teachers in procedures for teaching with learning hierarchies, the school district can expect its teachers to be more cooperative and more open to the move toward accountability for student growth.

In Teaching Achievement Motivation, Alfred Alschuler (6) discusses the merits of an open, supportive, choice-offering environment, where students take more responsibility for their own learning as a solution to overly bureaucratized schools in which students feel trapped in situations they neither created or controlled. An organization of subject objectives into small, sequential learning steps (learning hierarchies) makes it possible for a student to:

- Understand the progression of content or skill
- Evaluate his/her progress when learning, and control whether or not certain elements (steps) are skipped or worked on longer
- Identify the basic components of a learning objective, and assess the success level relating to his/her personal competence
- Feel that the control of the learning situation is a personal one

These possibilities contribute to the development of achievement motivation in the learner.

The Planning Process

The intent of this paper is to recount briefly the management process and the sequence of activities that have lead the Baltimore City Public School System to the stage in its curriculum development where the focus is upon learning hierarchies as a major tool in the improvement of the teaching/learning process.

Following study sessions in 1973 in which administrators and teacher-leaders were oriented to Management-by-Objectives, management plans were developed by the Office of Staff Development for Phase I of an extensive in-service training program. Teacher-leaders from the nine regions of the school district became involved in training sessions designed to enable them to be trainers of other teachers in teaching with learning hierarchies. The extensive in-service training program, entitled Teaching-by-Objectives, focused upon enabling teachers to develop their own learning hierarchies for short instructional units in their classrooms. Supported by a core of some thirty (30) trainers from the Office of Staff Development, the teachers were helped to see why a lesson should not be an amorphous experience controlled by nebulous goals. Instead, the teachers were shown how learner objectives could be task analyzed and placed in a structured sequence for the learner to follow. Similarly, teachers were shown how a topical hierarchy could be beneficial to the teacher in planning learning objectives and activities for a body of content.

The teachers were shown also the benefits of having an entire curriculum developed and taught with learning hierarchies. When the teacher and the learner are aware of the sequence of skills or content to be mastered, then more attention can be given to the structure and variety of the learning process. Emphasis can be placed upon designing activities that are suitable, appealing, helpful and realistic for the learner. At the same time more emphasis can be placed on evaluation of progress through "feedback." A learner might select a learning partner to work on segments

of a hierarchy as a team; a filmstrip may be used; slow repetitive reading may be used; note taking with oral discussion may be utilized. The likelihood for increased motivation is preserved when long-range assignments are translated into shorter, more discrete, measurable units. Teachers who became proponents of the use of learning hierarchies agreed that once the hierarchies were formulated, the quality of instruction, as stated by Elliot Eisner in Confronting Curriculum Reform (7) rested on the degree to which the presentation, exploration, and ordering of elements of the task to be learned approached the optimum for a given learner.

Phase I of the in-service program on Teaching-by-Objectives with learning hierarchies has reached 60% of the 8000 teachers in Baltimore within less than two and a half years. Previous to the concentration on learning hierarchies, quite a few leaders had received training in the philosophy and skill of using behavioral objectives as suggested by Robert Mager in Preparing Instructional Objectives (8).

The transition to learning hierarchies was facilitated by an extensive in-service program conducted by the Office of Staff Development (OSD). J. Marvin Cook of the University of Maryland served as the principal consultant. The in-service manual entitled How To Meet Accountability with Behavioral Objectives and Learning Hierarchies by Cook and Walbesser (9) was used as the principal training manual for the entire school system.

The regional involvement process made it possible for greater diffusion of the in-service program and for the use of the learning hierarchy

approach in the various elementary and secondary schools. Coordinators in the specific subject offices that comprise the Division of Instruction and Curriculum Management (DICM) utilized the same teaching-by-objective (learning hierarchy) philosophy as they conducted in-service curriculum sessions for the department heads of the secondary schools. These sessions were learning sessions for department heads, who, in turn, were responsible for teacher development and curriculum leadership in mathematics, English, science, home economics, industrial arts, foreign languages, social studies and all the other disciplines.

The Commitment

After two years of preparatory in-service work among teachers in the school system, the long-term commitment to the use of learning hierarchies by the total school system was expressed by the Deputy Superintendent in a memo placed at the beginning of all Baltimore City Public School curriculum guides developed in 1975. (See Exhibit A) This memo verbalized the commitment of the total school system to the use of learning hierarchies: all future, written curriculum guides would be produced in learning hierarchical form for use in the classroom.

DICM is the central curriculum division that renders support services in curriculum to the regions and to the entire system. One of its responsibilities is to update the curriculum guides used on the various educational levels. After intense study sessions on the use of learning hierarchies, this group developed a five-year plan for curriculum production. The following are agreements implicit in the plan:

All newly-produced guides and courses of study will refer to the use of learning hierarchies as a resource for improved instruction.

The services of teachers will be used to produce sample learning hierarchies in specific subject areas as well as interdisciplinary curriculum organizations.

The collection and dissemination of banks of hierarchies will display the fluidity of the use of hierarchies and the fact that the most effective hierarchies may be made by teachers with a specific classroom group or by teachers and students cooperatively planning and evaluating a learning task. The curriculum office was envisioned to have classroom-produced hierarchies and central curriculum-produced hierarchies. Samples of hierarchies could be requested on need or could be published for use by teachers, students, and even interested parents. Indexes of hierarchies in subjects were made and disseminated by the DICM Coordinators.

All meetings for and with teachers will be a paradigm of effective teaching-learning situations and will demonstrate in a functional manner the use and applicability of learning hierarchies.

Frequent in-service meetings on the use of learning hierarchies to enhance individualized instruction and to facilitate mastery learning by the majority of the students will be necessary.

Performance expectations (proficiency tests) in various subjects and on specified educational levels will be an outgrowth of the emphasis on learning hierarchies.

Observations

A study of decentralization of fifty of the nation's largest school districts by Gordon Cawelti, Executive Secretary of the Association for Supervision and Curriculum Development indicates "accountability for curriculum development may not have been substantially strengthened" (10). In addition, he wrote, "Urban school districts need massive help if a city-wide change in learning strategies is to be brought to all teachers in a particular subject area." Moreover, he wrote, "A major problem in

urban districts is finding an effective mechanism for curriculum renewal that can be felt city-wide." The effective vehicle for curriculum renewal is a technique that focuses on the core issue -- student achievement. If student achievement can be enhanced through the system-wide, systematic use of learning hierarchies, then the massive push for this should come from the Superintendent with the support of the various teacher and administrator organizations. A public relations factor for the added "push" should be the understanding by students and by parents of the philosophy and the use of learning hierarchies.

In the Baltimore City Schools the use of the described strategy is operating at a sixty percent efficiency. The following designated support and techniques are still needed for improvement and future growth:

- Teachers need continued help in the construction of learning hierarchies. More emphasis should be placed on in-building, small teacher group activities in reference to specific subject matter.

- The theory and use of learning hierarchies should be related to mastery learning with accompanying research to evaluate results in an objective manner. (James Block's strategies for defining mastery, which include deciding upon the most significant instructional objectives for all the class to realize, and organizing them according to Bloom's taxonomy are effective mechanisms for relating the formulation of learning sequences to mastery (11). Criterion referenced testing could parallel this development.

- A teaching strategy such as the use of learning hierarchies should be so entrenched in faculty use or system use that a change in administration would not jeopardize the progress being made. (In some areas of the system when a leader was changed, the entire professional process involving progress in the use of hierarchies came to a grinding halt to move with the new leader's emphasis.)

- Much time should be spent in orienting the students to the process. How can students work independently with learning hierarchies? Should two students be on different steps in the learning hierarchy? Why? If students are on different hierarchical steps, how is the class managed for individual instruction, use of study guides, team learning, student-to-student tutoring? These are realistic questions which must be addressed together with the efficacy of the entire conceptual framework of learning hierarchies.

- Teachers must understand that the use of learning hierarchies is not a panacea. There must still be adequate preparation, careful attention to techniques for guiding success in learning, and wholesome classroom interpersonal relationships that end in achievement.

- There should be periodic assessment of the progress or lack of progress re teacher growth and instructional improvement as a result of the system' use of learning hierarchies.

- The use of learning hierarchies in the framework of teaching-by-objectives should be viewed as not an addition to a teacher's job but as a means of improving teacher performance and student achievement. Suitable support services to foster teacher success should be considered by all who relate to teachers in a professional manner. This includes department heads, curriculum coordinators, principals.

- Sufficient time must be given for teachers to increase efficiency in the use of learning hierarchies and for students to grow accustomed to monitoring their own learning through their use.

- The process of validation of existing hierarchies in curriculum guides must be initiated.

Phase II is now being planned to provide each teacher in the school system additional support at the point of using learning hierarchies in the classroom. This support will be in response to the observed needs identified from operation of Phase I of the continually evolving long-range plan to implement learning hierarchies into the classroom curriculum of Baltimore City Public Schools. A second manual entitled Making Learning Hierarchies Work for You by Cook and Walbesser (12) is presently in press. This manual

has been developed to provide direct detailed support to the teacher in managing her classroom with learning hierarchies. Baltimore City Public Schools sees this new manual as an important resource as it continues its effort to improve student achievement by the use of learning hierarchies.

Conclusion

One thing is certain in the Baltimore City Public School System as it is in all urban centers -- techniques that insure learning continuity, individualized instruction, development of basic skills, systematically-planned content, and student motivation to learn how to learn are sorely needed. The use of learning hierarchies on a system-wide basis is a small -- but important -- beginning. Will it be effective? The resultant student achievement will provide the answers.

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EXHIBIT A

CITY OF BALTIMORE

WILLIAM DONALD SCHAEFER, Mayor

DEPARTMENT OF EDUCATION

DEPUTY SUPERINTENDENT,
BUREAU OF EDUCATION
3 East 25th Street, East Wing
Baltimore, Maryland 21218

August, 1975

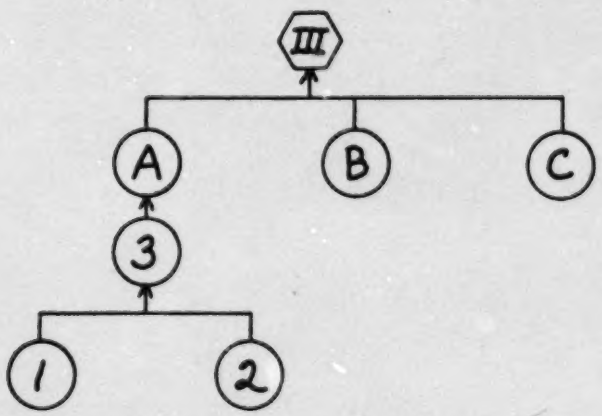
TO: Readers of Learning Hierarchies

FROM: Rebecca E. Carroll, Acting Deputy Superintendent

Not all students learn at the same rate or in the same manner. The mere fact that some students find learning or the acquiring of a specific skill difficult indicates a need for a greater concern on the part of the curriculum maker for sequence. Teachers are challenged to analyze a specific topic or learning task to ascertain the components in a sequential order.

In mathematics the term "prerequisite skill" connotes a skill that must be mastered to insure acquisition of another or a higher skill. Some students fail long division because they have not mastered the prerequisite skills.

In each curriculum area skills can be identified as terminal skills. Skills can be identified that lead to success in the terminal skill.



Example: Ability to perform Skill III depends on one's ability to do Skills A, B and C. Sub-skill A is dependent upon the acquisition of skills 1 and 2 which lead to 3 and then to A on the learning hierarchy. A, B and C are co-equals, one not dependent on the other, but should be mastered before terminal skill III.

Learning hierarchies help both students and teachers realize purpose and the necessary path to attain each skill. Teaching can be made more logical using learning hierarchies. The mature student can use a learning hierarchy to check and program his own learning in an individualized situation.

The user of learning hierarchies must realize that they facilitate and make instruction logical. They are a tool for learning. Pupil motivation, classroom climate, interpersonal relations of teacher and student, pupil involvement, and the use of instructional strategies of a multi-sensory nature are still components of a successful learning experience.

As the learning hierarchies in this volume are used as a tool for planning and teaching, it is hoped that the teacher's use of behavioral objectives and attempts to individualize instruction will maximize learning on the part of each student.

Keep a record of your plans. Communicate your use of the hierarchies or, in some instances, modification of them with the appropriate person. Above all, make your teaching productive in terms of effective learning for each student.

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